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ABSTRACT

This study examines the conceptual and theoretical issues arising from the planned redesign of ERIC (the Educational Resources Information Center) and its potential new roles in the dissemination system. A three-level definition of the ERIC system is provided; the goal of making ERIC a comprehensive dissemination program is refined to one of making it a comprehensive information service; and the relationship of ERIC to other parts of a comprehensive dissemination system is described. Additional considerations that are discussed include the dilemma of choosing between indirect and direct strategies of service provision, the question of generalization versus specialization, and the value of cooperative relationships with other programs, particularly regional laboratories and research centers. Finally, the role of information in educational improvement is presented from the three perspectives of technology transfer, renewal, and facilitation. It is concluded that it is essential that ERIC become more firmly grounded in a theory of knowledge use, and that studies of ERIC be used in making design decisions. The text is supplemented with two figures, and 27 references are provided. (KM)

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ERIC AS A DISSEMINATION AGENT: A SOCIAL SYSTEM PERSPECTIVE

Ward S. Mason

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ERIC AS A DISSEMINATION AGENT: A SOCIAL SYSTEM PERSPECTIVE

Ward S. Mason

The Educational Resources Information Center (ERIC) has been the key information base for the dissemination system in education for over two decades. In the current planning for the restructuring of ERIC, it is being asked to take on a much broader and active role. As one who has spent several years examining dissemination theory, I have been asked to comment on the conceptual and theoretical issues that arise from the planned redesign of ERIC and its potential new roles in the dissemination system. This paper is a companion piece to another prepared by Charles Haughey (Haughey, 1987).

Perhaps a word is in order concerning my background and the perspective that I bring to this task. Over a 28 year period I served in a number of the programs now sponsored by the Office of Educational Research and Improvement (OERI), including the Center for Educaional Statistics, the R&D Center Program, the Regional Laboratory Program, the Dissemination and Improvement of Practice Program, among others. For a year I was administratively responsible for the ERIC system. I have managed programs of research on the R&D system for education (NIE, 1976) and designed studies of interorganizational relationships in that system. All

of this has given me a view of the education research and school improvement enterprise as complex collection of many kinds of organizations in which responsibilities for diverse innovative and reform functions are distributed in many ways. There is no one-to-one correspondence between structure and function.*

While there is widespread agreement that the purpose of the research, development, and dissemination (RDD) system is to increase the effectiveness and efficiency of American education, there is little recognition that this is a system goal innappropriate as the responsibility of any one component of the system. Most program managers seem to think that, if only they can move the right levers, they will achieve some dramatic improvement in education, and, lemming-like, accept that goal as the test of their program effectiveness. Yet only in rare circumstances can the best program by itself have measurable impact on education. That end can be achieved only when the various components of the system are performing effectively and working together in some reasonable harmony.

How does all this apply to ERIC? ERIC has been the chief (but

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*I use the term "system" as a way of connoting the "big picture". I do not mean to imply that there is a neat articulation among the parts; indeed, there is considerably evidence that it is "loosely coupled" and more akin to a community. See Guba and Clark, 1974.

not the only] information base for educational research and other knowledge resources for two decades. While its core function has been to archive and provide ready access to education literature, it has been engaged, at the margin, in a number of other information service activities, including the provision of bibliographies and information analysis products. The "master plan" for a reconfiguring the system, ERIC in its Third Decade, proposes a major shift in emphasis "from stressing an archival role to greater emphasis on the dissemination of useful information". It further proposes that ERIC "go beyond it traditional role and truly function as a comprehensive education information dissemination system".

It is important to understand what such a shift might involve and what its implications might be. Haughey has suggested that there are two questions to be addressed in this connection, one related to identifying the appropriate role for ERIC as part of a comprehensive education dissemination system, the other whether ERIC should change to become a comprehensive system in its own right (Haughey, 1987). We will discuss each of these questions. But first, a short digression is necessary in order to clarify our references to ERIC.

What is ERIC?

One of the difficulties in interpreting studies and analyses of ERIC is that references to the system are often ambiguous.

Are the references to activities funded by OERI? But the ERIC Document Reproduction Service (EDRS) operates under a no-cost contract and is essential to operation of the system. Also the Current Index to Journals in Education (CIJE) and several other basic ERIC-related resource publications are produced by a commercial firm, Oryx Press, that has no contractual relation with the government. In addition, the Government Printing Office (GPO) prints and distributes Resources in Education (RIE) and some descriptive system brochures and provides microfiche copies of ERIC/ED reports to depository libraries. We shall use the term "Federal ERIC" to refer to those components funded by OERI (Central ERIC, the Facility, and the Clearinghouses). "National ERIC" consists of Federal ERIC plus those national components not receiving OERI funds but related to Federal ERIC through formal or informal agreements (EDRS, Oryx Press, and GPO) [see Figure 1].

However, neither Federal ERIC nor National ERIC include the chief mechansisms for the delivery of ERIC services. These are provided by over 3,000 access points located at libraries or information services provided by academic institutions, state, intermediate, and local education agencies, offices of professional associations, and so on. In addition, a number of major data-base retrieval services purchase ERIC tapes and provide on-line searches for their customers. "Greater ERIC" consists of National ERIC plus the information service providers [ISP's].

Currently Federal ERIC is funded at the level of $5.8 million. However, this represents only 4.5% of the estimated $130 million from all sources for the development, distribution, and use of ERIC products and services (Bencivenga, 1987).

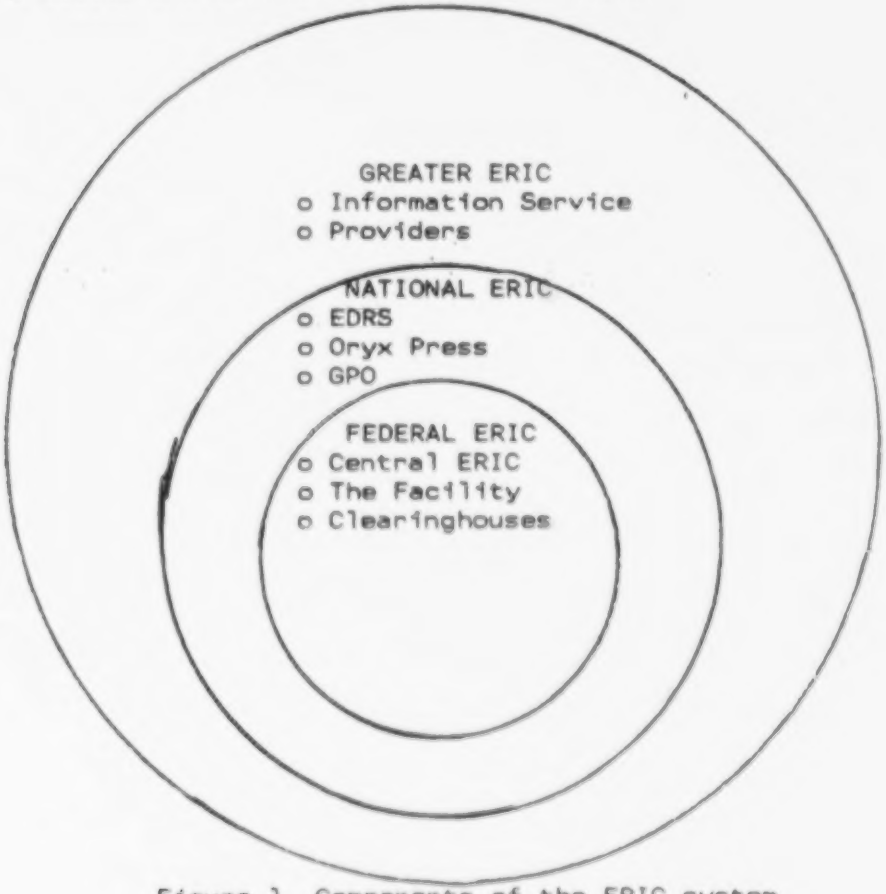

Figure 1. Components of the ERIC system

The Third Decade report (Bencivenga 1987) proposes to add a number of components to the total system. Access ERIC (Collins 1987) would serve a coordination function for National ERIC, and,

at least initially, would be federally funded. Adjunct Clearinghouses (Payer, 1987) would perform functions similar to those of the present clearinghouses. Since they would not be federally funded but bound by formal agreements, they would fall into Greater ERIC. ERIC Partners (Ashburn 1987) would be additional ISP's in Greater ERIC.

A Comprehensive Set of Dissemination Functions

In functional terms, there are two ways in which ERIC might become more comprehensive. The first involves moving beyond information services to additional dissemination modes. The second involves offering a more complete set of services and tactics within the information service mode.

The use of knowledge is only one strategy for the improvement of education [Mason, 1982]. Providing financial resources and changing regulations are alternatives that come to mind readily. And provision of information services is only one of three major tactics for facilitating the use of knowledge. It is the nature of information services that they are concerned with transmitting recorded knowledge, whether recorded in print, on microrecords, electronic media or other. While people are obviously involved in the operation of such services, the services are defined by the focus on recorded knowledge.

In two other dissemination modes, people are the media. In the case of professional development, faculty or other

instructors organize knowledge around the problems of a professional role such as mathematics teacher or elementary school principal. In the case of technical assistance, consultants or other support personnel organize knowledge around the problems of a particular situation (e.g. the Oak Park Elementary School) or the implementation of a particular innovation (e.g. an effective schools package) or both. While these definitions are abstract and given knowledge use programs may exhibit two or more dissemination modes, they serve to highlight some useful differentiations. According to this formulation, a comprehensive dissemination program contains all three dissemination modes, i.e. information services (IS), professional development (PD), and technical assistance (TA).

I doubt that this is the meaning of "comprehensive" intended by ERIC planners. To move in this direction would put ERIC in competition with other institutions specializing in PD and TA and extend it well beyond its area of competence.

The other way of becoming more comprehensive would be to offer a more complete set of information services. The staff study of ERIC makes the useful distinction between the bibliographic/archival function and the service delivery function within information services (MacColl et al, 1985). The comprehensiveness goal can best be understood as moving to a more balanced concern with both functions. In part, this involves assuming a more active stance. The planning papers suggest, for

example, that by targeting some key audiences and undertaking needs sensing activities, information products might be packaged to meet the needs identified. While this seems reasonable, a note of caution is in order. Needs sensing is a notoriously difficult task when undertaken by formal research methods. It is hard to sort out "true" priorities, and perceived needs are contantly shifting. It would be better to keep needs sensing as a more informal by-product of working with client groups. However, more general studies of the information seeking behaviors of particular groups and the kinds of products that catch their attention could be very useful. (See Cohen, 1985 for studies of state policy makers.)

The dissemination function is virtually ubiquitous, being found as at least a minor responsibility of almost every role and organization (Haughey, 1987). There also tends to be a high degree of useful redundancy in the system. With information services, however, the usefulness of redundancy differs considerably between database management and service delivery. Duplication of effort for database management would be highly inefficient, while there is room for many organizations to be involved in information service delivery. For those databases for which it is responsible, National ERIC is in a near monopolistic position, and if it fails in its performance, there is no other organization to take up the slack. This is not the case with service delivery. Indeed, if National ERIC becomes

involved in service delivery it will be competing with many other service providers.

It is important not to confuse dissemination with marketing. Marketing refers to ERIC's attempts to promote itself as an information service. All three dissemination tactics are also marketing tactics. Dissemination, on the other hand refers to the transmission of information for the management or improvment of education.

To sum up, I suggest tha the goal of offering a comprehensive dissemination program be refined as offering more active and complete information services but not by undertaking the additional dissemination tactics of professional development and technical assistance. Marketing the ERIC system by all three dissemination modes is appropriate, however.

The Role of ERIC in a Comprehensive Dissemination System

The second issue of comprehensiveness concerns the relation of ERIC to other parts of the system for the production and utilization of knowledge in education.

What is the nature of that infrastructure? A number of attempts have been made to describe the research and development system of the United States (NCERD, 1969; NIE, 1976; NIE, 1982). Suffice it to say that it is a very complex and "loosely coupled" system operating at many levels (federal, regional, state, intermediate and local) and in many kinds of organizations

(public and private; educational and commercial). Information service providers, for example, are found in schools of education, state, intermediate, and local education agencies, regional laboratories, R&D centers, public libraries, state libraries, etc. (Crandall, 1986). Add to this the immensity of the educational system to be served (3.3 million instructional staff members, 111,763 public and private elementary and secondary schools, 3,340 colleges and universities, schools, 15,747 public school districts, etc.) and the tasks of dissemination seem overwhelming (CES 1987).

The temptation is to ignore this complexity and propose simple models. The Redesign Plan calls for an expansion of direct services by Federal and National ERIC. Direct services are those that serve ultimate users; indirect services are those that involve intermediaries or chains of activity and might also be terms "system support functions".

The choice between direct and indirect strategies poses a fundamental dilemma. Clearly the ultimate payoff for educational improvement is found in the various contexts of educational practice, most typically the classroom, but also schools, school districts, and others. It is these outcomes that are most prized and most easily communicated to Congress and the public.

Given the immense size and complexity of the American educational enterprise on the one hand, and OERI's relatively meager resources on the other, some form of leverage (i.e.

indirect strategies) seems to be required. Yet, given the fact that the educational "configuration" is "loosely coupled" (Guba and Clark, 1975), the outcomes of all indirect strategies are problemmatic. This suggests the need for direct strategies.

Fortunately, this is not an all-or-none choice. Clearly the bulk of ERIC services will continue to be provided through intermediaries. The issue is the extent to which National ERIC ought to undertake direct services. A possible guiding principle would be that ERIC information services should be provided by units at the same level or at most only one level above the level of the unit to be served. Thus, national professional associations might best be served by Access ERIC or the appropriate clearinghouse, but state level associations might better be served by a regional laboratory or state level information service provider.

Generalization vs. Specialization. ERIC clearinghouses are clearly specialized by topical area. They are staffed with substantive experts who are needed for quality control functions on the acquisition end and for analytic functions on the dissemination end. They have ties to specialized professional associations and provide a certain amount of direct service through these connections. But many ISP's offer access to the system across all topical areas. It is important to sort out in each part of the system whether specialization is appropriate.

It has been suggested, for example, that certain important users, like state legislative aides and policy makers, need to be targeted for special services from Access ERIC. Since such users might be interested in almost any policy issue, service from a generalist unit like Access ERIC might seem logical. But each issue is on a specific topic, and so if ERIC is to provide the service, Access ERIC might better refer individual issues to the appropriate ERIC clearinghouse.

However, there are other possibilities. The Redesign Plan states as a goal better coordination with other dissemination organizations and programs, both in OERI and beyond. Yet no specific proposals along these lines are made. It happens that the regional laboratories have as one of their goals serving the policy analysis needs of the states. Since they are organized on a regional basis they are in a position to understand the context of needs identified by each state in their region. So laboratories are good sources of generalist assistance. In addition, research centers supported by OERI are specialized by topic, and one, that at Rutgers, is focused on the process of improving policy analysis. Might not research centers be important sources of specialized assistance?

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The Role of Information in Educational Improvement

The ERIC redesign does not seem to be grounded in any explicit theory of the role of information in educational improvement. Implicitly, the plan appears to represent an extension of the "get the word out" model to one which recognizes the importance of matching the message to the need.

We seem to have come full circle. In the beginning of the Cooperative Research Program in the U. S. Office of Education in the 50's the assumption was that research would "speak for itself". ERIC began as a way of making sure that the research was adequately documented and available. With the advent of the R&D Centers and Regional Laboratories in the 60's a complex set of research, development, and dissemination functions was recognized as essential for linking knowledge to practice. For awhile, development was thought to be the key function--a way of making research knowledge useful. But the "not invented here" syndrome made its appearance with the reluctance of schools to adopt externally developed innovations in some situations. So we shifted to a focus on local context and the need to adapt innovations to that context. The 80's have seen a movement away from knowledge as the lever of improvement and an emphasis on state-level regulation and reform from within at the school level. The role of knowledge providers is to sense the needs of users and package knowledge products appropriately.

Thus, over time, we have recognized the functions of various

parts of a complex RD&D system. It is time that we avoided undue emphasis on any one part and arrived at a more balanced view of the whole. There are three valid orientations toward knowledge use that demonstrate the aphorism that "where you stand depends on where you sit". These are represented by three overlapping circles in Figure 2. For the researcher or other knowledge producer, the starting point is the existence of newly created knowledge, leading to the question, "What can I do to see that this knowledge is used for educational improvement?' This perspective is labeled the technology transfer perspective.

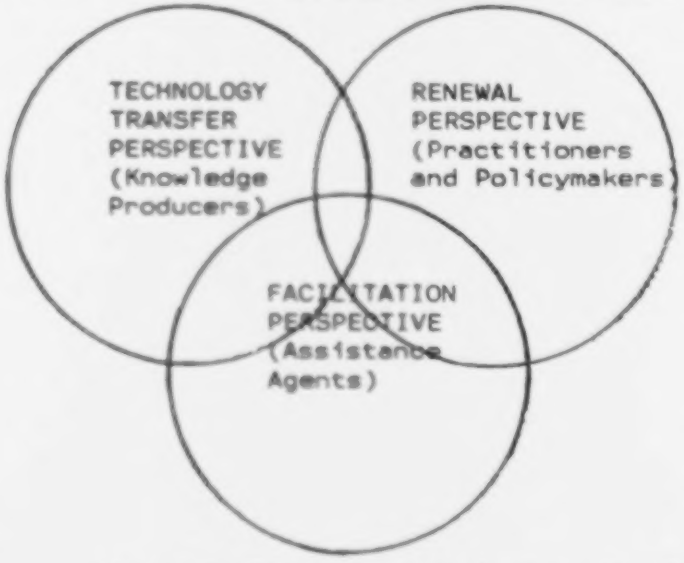

Figure 2: Three Perspectives on Knowledge Use For Educational Improvement

The renewal perspective is that of the practitioner or policy maker. The starting point is responsibility for some educational program, activity, or function. It asks the question, "What knowledge is available to help me improve my operation?"

Finally, the facilitation perspective is the view of those in education assistance agencies or positions. Its starting point is the mission of matching needs for educational improvement with available knowledge resources. It asks the question, "How is the educational improvement need defined, and what knowledge resources are appropriate to meet that 'need?" External facilitators often assist in refinement of the problem definition as well as searching for appropriate information and products.

In Figure 2 these perspectives have been represented as overlappying circles in order to emphasize that they are not "pure", but that those in each situation may have multiple orientations. For example, while knowledge producers have a dominantly "push" orientation, a good product marketer does market research in order to develop products that are needed. Neither technology transfer nor facilitation can have much impact if there is not some energy in the schools for renewal and reform. On the other hand, few schools have the capability to "pull themselves up by their bootstraps"; at some point they will need external assistance from a facilitator or knowledge producer. Finally, the technology transfer and facilitation circles overlap to indicate that knowledge producers essentially have two choices: they can retain responsibility for the dissemination of their own innovations, or they can channel their innovations into generalized resource newtorks.

To return to the problem of knowledge use, Crandall has

warned against the assumpation that "making changes in the supply side of information provision will be sufficient to result in routine use by non-researchers" (Crandall, 1987). Other writers have documented the apparently disappointing record on the use of formal policy analysis for the formulation and implementation of policy (Mitchell, 1981; Lindblom and Cohen, 1979; Lynn, 1978). Perhaps this disappointment is valid if one expects a simple instrumental relationship betwen analysis and action. But there are many meanings of research use (Weiss, 1979), and more often research serves an enlightenment function.

> Research does not solve problems; it provides evidence that can be used by men and women of judgment in their efforts to reach solutions. It helps to establish the premises on which the debate shall take place, providing an orientation, a language of discourse, and a conceptual base for the discussion of policy. (Weiss, 1978, 76-77)

These are examples of the insights that have emerged from a whole new field of research on knowledge utilization. This field has its own Journal, Knowledge: Creation, Diffusion, and Utilization, and professional networks (e.g. the Special Interest Group on Research Utilization of AERA). Research syntheses have begun to appear (e.g. Lehming and Kane, 1981; Louis et al, 1984). It is essential that ERIC managers and planners become familiar with research findings in this field in order to establish a solid foundation for the ERIC system. This point can be

broadened to include the research and conceptual literature on ERIC itself. ERIC has undergone study and review throughout its twenty-year history, including major studies conducted within the past three years. Yet the ERIC planning papers make few if any references to this literature. It is time for ERIC planners to become information users.

Summary

This paper has attempted to draw attention to several theoretical and conceptual issues that arise from the planned redesign of the ERIC system. Distinctions are made among Federal ERIC, National ERIC, and Greater ERIC. The goal of making ERIC a comprehensive dissemination program is refined to one of making it a comprehensive information service. With regard to the place of ERIC in the larger education dissemination system, its database management function is seen to be unique and crucial, while its service delivery functions are potentially redundant and competitive. It is important to sort out specialist and generalist functions, and the potential of cooperative relationships with other programs, particularly the regional laboratories and research centers, needs to be examined. The choice between direct and indirect services involves a dilemma between the need for leverage and the desire to be able to see more direct results. It is essential the ERIC become more firmly grounded in a theory of knowledge use and that studies of ERIC be used in making design decisions.

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